

## Exhibit 3

**THE VIKEN SELECTIVE BYPASS AUTOTRANS FLUID EXCHANGE  
PROTOTYPE**

Photocopy 1 is a photocopy of an original stamp dated first photograph of the Viken Selective Bypass Prototype (this photo was processed and printed prior to February 1, 1993).

Photocopy 2 is second photograph of a second original stamp dated photograph of the Viken Selective Bypass Prototype (this photo was also processed and printed prior to February 1, 1993).

The second Photograph was taken a shorter distance from the Selective Bypass Prototype than the first Photograph and shows the whole Prototype, whereas the first Photograph shows a close-up of the control elements of the Prototype.

FIG.1 is a drawing which is an accurate representation of the Selective Bypass Prototype which clearly shows all the component parts of the Prototype in the approximate same positions displayed in the first and second Photographs.

FIGS. 2 through 4 are drawings of the Prototype which are accurate representations of the Selective Bypass Prototype and illustrate all of the component parts of the Prototype in a less cluttered depiction.

**DESCRIPTION OF THE PARTS OF THE VIKEN SELECTIVE BYPASS  
AUTOTRANS FLUID EXCHANGE PROTOTYPE AND THEIR  
ARRANGEMENT**

Part numbers listed below correspond to part numbers of Photo 1 and FIGS. 1-4. FIGS. 2-4 show the Prototype in various modes of operation and arrangement.

(Note: the support frame, part number 5 in Photo 1, is not shown in FIGS. 1, 2 & 3 since it provides structure for the parts and has no dynamic operational function).

Referring to FIG. 1, the parts of the Prototype are arranged and described as follows:

A Fresh fluid reservoir 1 was constructed by adapting a 20 lb. LP gas canister to repeatedly and sealingly receive a Fresh fluid delivery conduit/vent assembly 7 at a sealable/resealable opening 6. A fresh fluid 2 is poured into the Fresh fluid reservoir 1 through the sealable/resealable opening 6 after which the Fresh fluid delivery conduit/vent assembly 7 is sealably inserted into opening 6.

Fresh fluid delivery conduit/vent assembly 7 was constructed from inserting a smaller diameter PVC conduit inside a larger PVC conduit tee, with the smaller diameter PVC conduit connected to communicate at its upper end with a Conduit 35 through a Quick connect union 23, and was arranged to communicate at its lower end with the bottom of

**Exhibit 3**

the Fresh fluid reservoir 1 to deliver fresh fluid therefrom into Conduit 35 to be discharged into the automatic transmission being serviced.

The larger PVC conduit tee was sealed off at its upper end from communicating with conduit 35 but open to establish communication between the top side of Fresh fluid reservoir 1, and a Conduit 71 through a Quick connect union 73.

Conduit 71 connected Quick connect union 73 to an On-off ball valve 69 which was a two-position two-way valve. A Conduit 21 connected valve 69 to a Tee connector conduit 85 which was connected to a Tee connector 88 and a Conduit 18. A pressure gauge 11 and a Schrader valve 90 were connected to Tee connector conduit 85. Tee connector conduit 85 was connected to an On-off ball valve 17 by a Conduit 18. On-off ball valve 17 was connected to a Quick connect union 22 by a Conduit 83. Quick connect union 22 was connected to an Old fluid delivery conduit/vent assembly 9. On-off ball valve 17 was a two-position two-way valve.

An Old fluid reservoir 3 was constructed by adapting a 20 lb. LP gas canister to repeatedly and sealingly receive an Old fluid delivery conduit/vent assembly 9 at a sealable/resealable opening 8. An Old fluid 4 has been delivered into the Old fluid reservoir 3 through the Old fluid delivery conduit/vent assembly 9 from the prior fluid exchange and must be emptied either by removing the Old fluid delivery conduit/vent assembly 9 and tipping the Old fluid reservoir 3 upside down over a drain or waste receiver. Or alternatively, compressed air can be used to force the used fluid out of the Old fluid reservoir 3 without opening it at its sealable/resealable opening 8 (this operative step will be described under the description of the operation of the Prototype).

Old fluid delivery conduit/vent assembly 9 was constructed from inserting a smaller diameter PVC conduit inside a larger PVC conduit tee, with the smaller diameter PVC conduit sealingly connected at its upper end to establish communication between a Conduit 57 through a Quick connect union 53, and open at its lower end to communicate with the bottom of the Old fluid reservoir 3 to deliver old fluid discharged from the automatic transmission being serviced thereto through Conduit 57.

The larger PVC conduit tee was sealed off at its upper end from communicating with conduit 57 but open to establish communication between the top side of Old fluid reservoir 3, and Conduit 83 through Quick connect union 22. Conduit 83 was connected to On-off ball valve 17 which is also connected to a Tee 85 which is itself connected to a Conduit 21 which is connected to an On-off ball valve 69 which is connected to a Conduit 71. Tee 85 is also connected to a pressure gauge 11

Conduit 35 was connected to a Large fresh fluid sightglass 41 through a Quick connect union 39. Large fresh fluid sightglass 41 was comprised of an adapted water filter casing with a large transparent bowl. Large fresh fluid sightglass 41 is typically left filled with Fresh fluid 2 from the prior transmission fluid exchange, but can be emptied and filled with a solvent or pre-flush conditioner which will be first introduced to the transmission

**Exhibit 3**

during the fluid exchange and then completely flushed out by the fresh fluid 2 contained in Fresh Fluid reservoir 1.

A Conduit 25 connected Large fresh fluid sightglass 41 to an On-off ball valve 19 through a Quick connect union 43. On-off ball valve 19 was a two-position two-way valve. A Checkvalve 20 connected valve 19 to a Tee connector Conduit 15. Conduit 15 was connected to a Tee connector conduit 81 which was connected to a Conduit 82 and to a Connector 14. A Pressure gauge 13 was connected to Connector 14. Tee connector conduit 15 was connected to a Conduit 86 which was connected to a Small sightglass 52. A Fresh fluid exchange conduit 37 was connected to Small sightglass 52 at one end and to a Fluid Tap 31 at its other end. Fluid tap 31 was connected to a Female quick connect coupler 29. Female quick connect coupler 29 was in turn connected to one side of an opened and separated fluid cooling circuit of an automatic transmission (not shown).

Flow selection indicator label 75 was affixed to the front side of valve 19 with steel wire. Flow selection indicator label 75 had a center hole which allowed the selector handle of valve 19 to pass through it to its front side. The front side of Flow selection indicator label 75 displayed a "BYP" position designation and an "ON" position designation, each of which was painted on the front side of Flow selection indicator label 75.

"BYP" represented a BYPASS valve position when the selector lever of valve 19 pointed to it and was characterized by placing the valve in an OFF operational position which blocked communication between Checkvalve 20 and Conduit 25.

"ON" represented an ON valve position when the selector lever of valve 19 pointed to it and was characterized by placing the valve in an ON or flow through operational position used when exchanging fluid in which Checkvalve 20 & Conduit 25 were connected.

Conduit 57 was connected to a Large old fluid sightglass 65 through a Quick connect union 67. Large old fluid sightglass 65 was comprised of an adapted water filter casing with a large transparent bowl. A Conduit 45 connected Large fresh fluid sightglass 65 to a Three-way flow selector valve 49 through a Quick connect union 44. Three-way flow selector valve 49 was a three-position three-way valve. A Conduit 82 connected Three-way flow selector valve 49 to Tee connector Conduit 81. A Conduit 84 connected the Three-way flow selector valve 49 to a Small fluid sightglass 51. A used fluid exchange hose 33 connected Small fluid sightglass 51 to a Female quick connect coupler 27, which was in turn connected to one side of an opened and separated fluid cooling circuit of an automatic transmission (not shown).

Flow selection indicator label 79 was affixed to the front side of valve 49 with steel wire. Flow selection indicator label 79 had a center hole which allowed the selector handle of valve 49 to pass through it to its front side. The front side of Flow selection indicator label 79 displayed a "BYP" position designation, an "ON" position designation, and an "OFF" position designation, each of which was painted on the front side of Flow selection indicator label 79.

**Exhibit 3**

"BYP" represented a BYPASS valve position when the selector lever of valve 49 pointed to it and was characterized by placing the valve in a BYPASS operational position which connected Conduit 82 and Conduit 84 while blocking Conduit 45 from communicating with Conduit 84.

"ON" represented an ON valve position when the selector lever of valve 49 pointed to it and was characterized by placing the valve in an ON or fluid exchanging operational position which connected Conduit 45 and Conduit 84 while blocking Conduit 82.

"OFF" represented an OFF valve position when the selector lever of valve 19 pointed to it and was characterized by placing the valve in an OFF or non-operational position in which Conduits 45 and 84 were blocked from communicating with each other and in which Conduits 82 and 84 were blocked from communicating with each other.

**DESCRIPTION OF THE OPERATION OF THE VIKEN SELECTIVE BYPASS AUTOTRANS FLUID EXCHANGE PROTOTYPE**

FIG.1 is a drawing of the Prototype which shows all the component parts of the Prototype. FIG.1 depicts the Prototype set in a mode used to empty the old fluid from the old fluid receiver. In FIG.1 the valves are shown to be in operational positions which allow the operator to empty the Old fluid from the Prototype.

FIGS. 2 through 4 are drawings of the Prototype which illustrate all of the component parts of the Prototype in a less cluttered depiction.

FIG.2 is a drawing of the Prototype which shows the Prototype connected to a cooling circuit of an operative automatic transmission, functioning in bypass mode of operation which can be used to indicate direction of fluid flow to determine if the Prototype is connected in proper flow alignment to the cooling circuit of the automatic transmission, and to determine the approximate pressure of fluid flow so that the Fluid Exchanger can be adjusted to exchange fluid at the approximate same rate of flow. FIG. 2 shows the Prototype connected to the autotrans cooling circuit connected in proper fluid flow alignment. FIG.2 is a drawing of the Prototype in which the valves, hoses and other component parts are displayed in a position which more simply depicts all of the component parts of the Prototype. The valves are shown to be in operational positions which occur when the operator has placed the Prototype in a selective bypass mode of operation and the Prototype is connected to an opened and separated transmission fluid cooling circuit of an automatic transmission. The engine can be started to render the transmission operative and when the Prototype is in Bypass mode, which results in the old fluid from the transmission being pumped into the Prototype through either the fresh fluid exchange hose 37 or the Old fluid exchange hose 33 from the higher pressure side of the transmission's cooling circuit, circulated through the Prototype, and then returned back into the transmission through the lower pressure (return line side) of its cooling

**Exhibit 3**

circuit. Operating the Prototype in this Selective Bypass mode with the transmission operative allows the operator to identify the direction of fluid flow to assess whether the Unit is connected in proper fluid flow alignment by noting which of the two Small sightglasses (51 or 52) fills up first with used, discolored fluid (note: both of the Small sightglasses (51 and 52) were filled with Fresh fluid from the last fluid exchange—when the Prototype was used for the first time, the operator noted which Small sightglass (51 or 52) became filled with old fluid first to determine which fluid exchange hose was connected to the higher pressure side of the cooling circuit of the transmission).

Operating the Prototype in this Selective Bypass mode with the transmission operative also allowed the operator to measure a fluid flow parameter (in this case the pressure of the fluid flow at Pressure gauge 13). FIG.2 shows the Selective Bypass Prototype connected in proper fluid flow alignment with the opened and separated cooling circuit of the automatic transmission. If the Selective Bypass Prototype had been connected without being in proper fluid flow alignment, Small sightglass 52 would have filled before with Old fluid from the transmission before Small sightglass 51. The operator then turned off the vehicle's engine to make the transmission inoperative, stopping the old fluid from flowing in the cooling circuit of the transmission and switched Female quick connect couplers 27 and 29 to establish proper fluid flow alignment between the Prototype and the cooling circuit of the transmission. The vehicle's engine was then started to again make the transmission operative to flow old fluid in its cooling circuit. During the use of the prototype it was determined that the operator could leave the vehicle's engine running and the transmission operative and switch conduits 25 and 45 at Quick connect Union 43 & 44, or alternatively could and switch conduits 35 and 575 at Quick connect Union 23 & 52, or at Quick connect Union 39 & 67. The engine of the vehicle does not need to be turned off (the transmission does not need to be made inoperative) because, when the Prototype is in its Bypass Mode of operation characterized by Valves 19 & 49 being in their Bypass positions, the Old fluid flowing out of the transmission's cooling circuit can only return back into the cooling circuit and is blocked from Conduits 20 or 45, and the Fresh fluid contained in Fresh fluid reservoir 1 is blocked from entering Conduit 20.

When the Prototype is connected in proper fluid flow alignment with the opened and separated cooling circuit of the transmission, it can be shifted into Fluid Exchange mode by moving Three way flow selector valve 49 from its Bypass Position (BYP) to its On position and by moving On-off ball valve 19 from its Bypass Position (BYP) to its On Position. When the Fluid exchange is completed, the Small sightglass which filled first with Old fluid in the Prototypes Bypass Mode, will display Fresh ATF. Because the Operator can switch the Prototype into or out of the Bypass Mode of operation at his (her) discretion, it is appropriate to refer to the Prototype as a Selective Bypass Prototype.

FIG.3 is a drawing of the Prototype which shows the Prototype connected to a cooling circuit of an operative automatic transmission in proper fluid flow alignment and which has been selectively shifted from its Bypass mode of operation into its fluid exchanging mode of operation without disrupting the normal rate of flow of fluid into and out of the cooling circuit of the transmission. FIG.3 shows the Prototype having been shifted out of

**Exhibit 3**

Bypass Mode and into Fluid Exchange Mode which was accomplished by the operator placing Valve 49 in its On-position which connects Conduit 45 to Conduit 84, and by placing Valve 19 in its On-position which connects Conduits 20 & 25. During the Fluid Exchange mode of operation, Fresh fluid reservoir 1 is connected to Conduit 20 to flow Fresh fluid 2 into the return line or lower pressure side of the transmission's cooling circuit, and Old fluid receiver 3 is connected to Conduit 84 to receive Old Fluid from the Transmission's cooling circuit. The fluid exchange can be discontinued by shifting the Prototype into its Bypass mode which is accomplished by placing the Three-way flow selector valve 49 and the On-off ball valve 19 in their respective Bypass positions, which immediately provides a closed loop connection to the opened and separated cooling circuit of the transmission while disconnecting the Old fluid receiver 3 and the Fresh fluid reservoir 1 from connection to the Old Fluid Exchange hose 33 and the Fresh fluid exchange hose 31. The fluid exchange can be stopped when the Small sightglass 51 or the Large old fluid sightglass 65 displays the approximate clarity of Fresh fluid 4, or when Large fresh fluid sightglass 41 begins to empty of Fresh Fluid 4.

FIG.4 shows the Prototype selectively shifted back into the bypass mode of operation after the operator is finished exchanging the Old Fluid of the transmission for the Fresh Fluid of the Fluid Exchanger. The Fluid Exchanger was selectively shifted back into the bypass mode of operation without disrupting the normal rate of flow of fluid into and out of the cooling circuit of the transmission, allowing the operator to keep the engine of the vehicle running and the transmission operative thereby providing an opportunity to draw a final fluid sample and check the fluid level in the transmission while the transmission remains operative. FIG.4 shows the Prototype after having been shifted into Bypass mode which was accomplished by placing the Three-way flow selector valve 49 and the On-off ball valve 19 in their respective Bypass positions which provides a closed loop connection to the opened and separated cooling circuit of the transmission while disconnecting the Old fluid receiver 3 and the Fresh fluid reservoir 1 from connection to the Old Fluid Exchange hose 33 and the Fresh fluid exchange hose 31. This gives the operator time to add any chemical additives to the transmission if he(she) desires to do so and provides additional time to check and or adjust the fluid level of the transmission without having to turn off the vehicle's engine to make the transmission inoperative for disconnecting the Fluid Exchanger from that cooling circuit for reconnection of that cooling circuit. The Viken Selective Bypass Fluid Exchanger provided a significant improvement in the fluid exchanger art since it allowed the operator to shift in and out of a Bypass Mode of operation at his/her discretion) without having to make the transmission inoperative, as was the way it was done before.

**Exhibit 3**Component Parts of the Viken Selective Bypass Prototype

1. Fresh fluid reservoir
2. Fresh fluid
3. Old fluid receiver
4. Old fluid
5. Support frame (made of glued PVC pipe) not shown in FIGS. 1&2
6. Fresh fluid resealable opening
7. Fresh fluid delivery conduit/vent assembly
8. Old fluid resealable opening
9. Old fluid delivery conduit/vent assembly
11. Pressure gauge
13. Pressure gauge
14. Connector
15. Tee connector conduit
17. On-off ball valve
18. Conduit
19. On-off ball valve
20. Conduit
21. Conduit
22. Quick connect union
23. Quick connect union
25. Conduit
26. Open male quick connect
27. Female quick connect coupler
28. Waste receiver
29. Female quick connect coupler
31. Fluid tap
33. Old fluid exchange hose
35. Conduit
37. Fresh fluid exchange hose
39. Quick connect union
41. Large fresh fluid sightglass
43. Quick connect union
44. Quick connect union
45. Conduit
49. Three way flow selector valve
51. Small fluid sightglass
52. Small fluid sightglass
53. Quick connect union
57. Conduit
65. Large old fluid sightglass

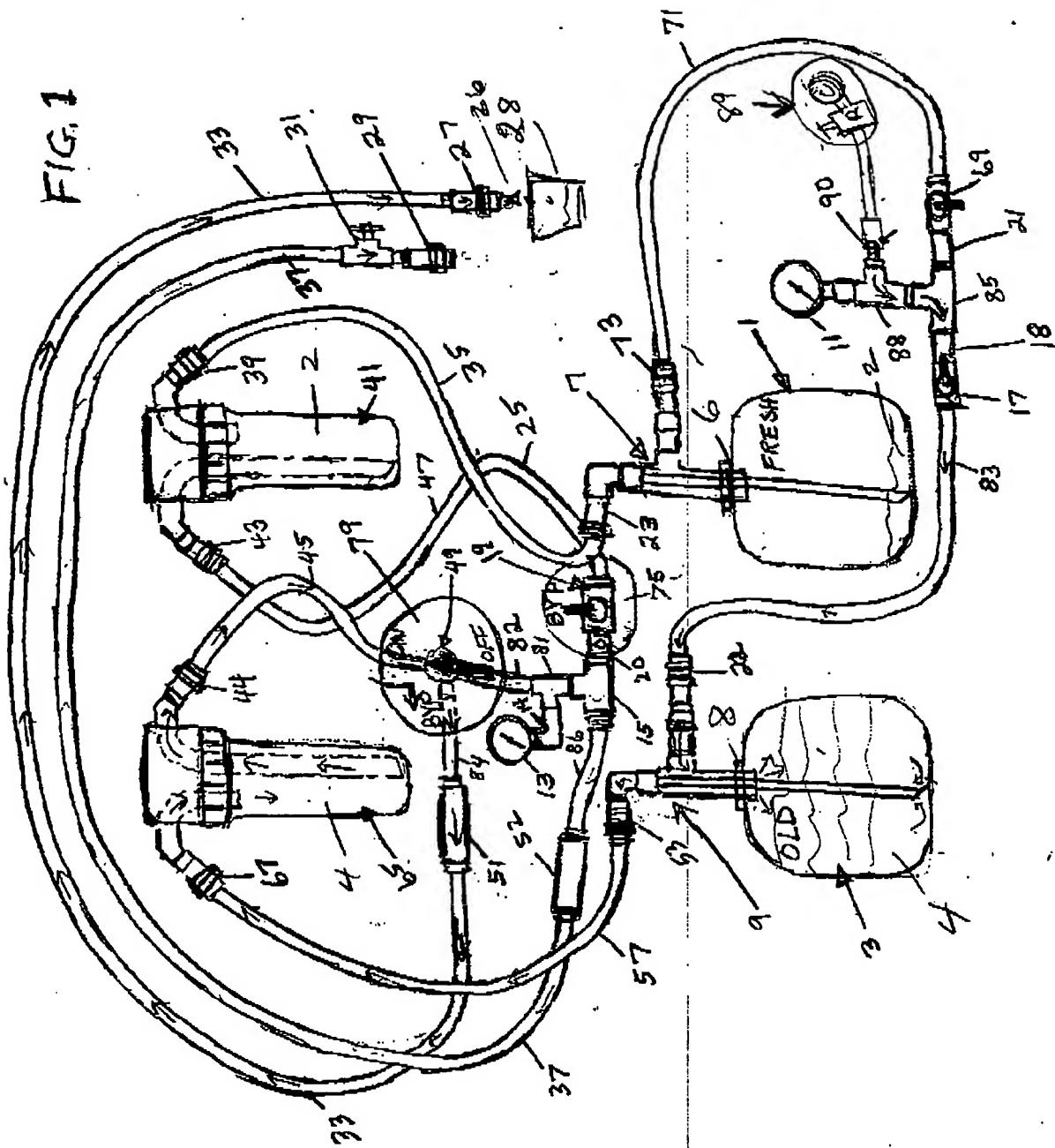
Component Parts of the Viken Selective Bypass Prototype (Page Two)

**Exhibit 3**

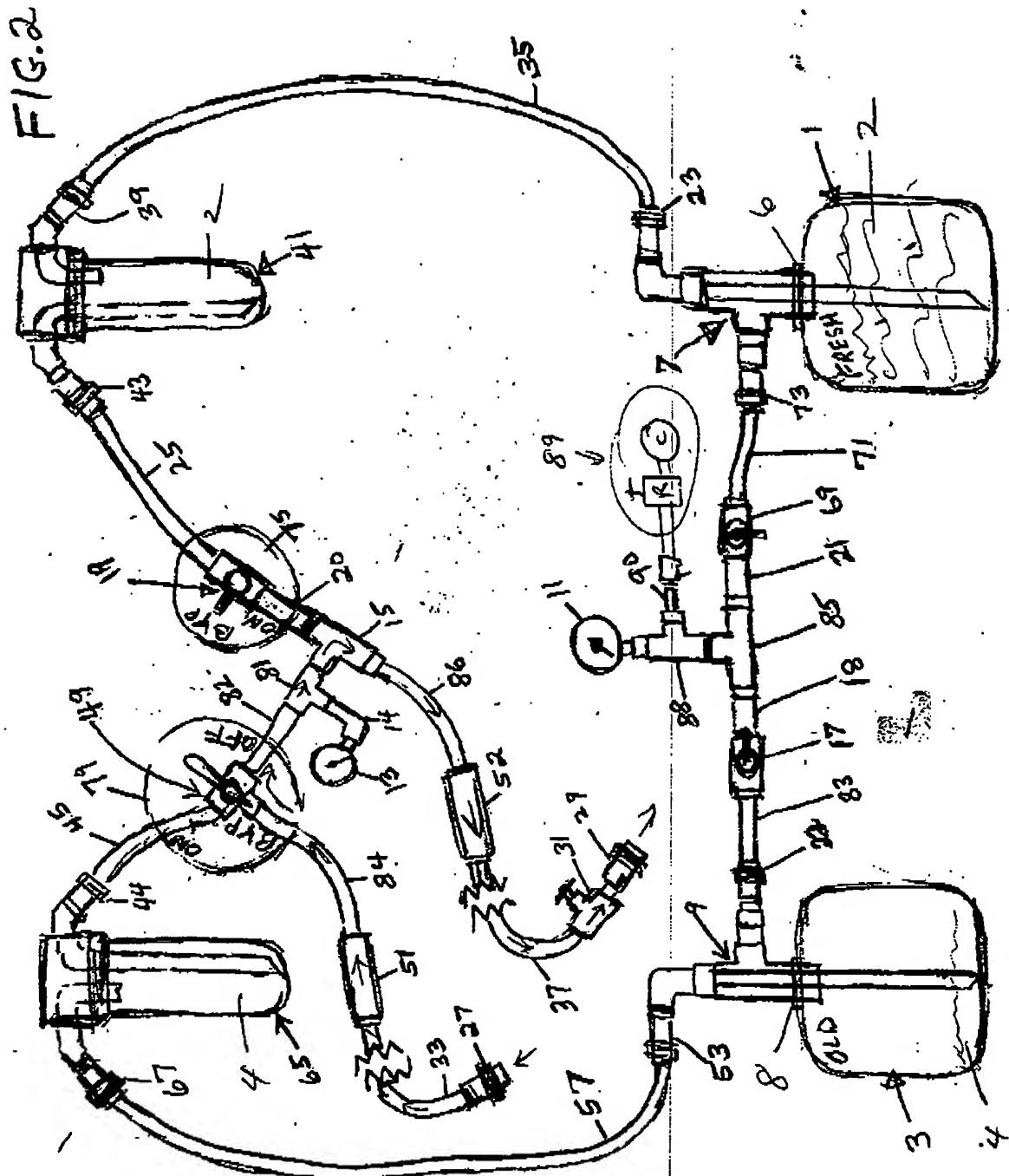
- 67. Quick connect union
- 69. On-off ball valve
- 71. Conduit
- 73. Quick connect union
- 75. Flow selection indicator label
- 79. Flow selection indicator label
- 81. Tee connector conduit
- 82. Conduit
- 83. Conduit
- 84. Conduit
- 85. Tee connector conduit
- 86. Conduit
- 88. Tee connector conduit
- 89. Regulated compressed air source
- 90. Schrader valve

### **Exhibit 3**

十一



### **Exhibit 3**



## Exhibit 3

FIG. 3

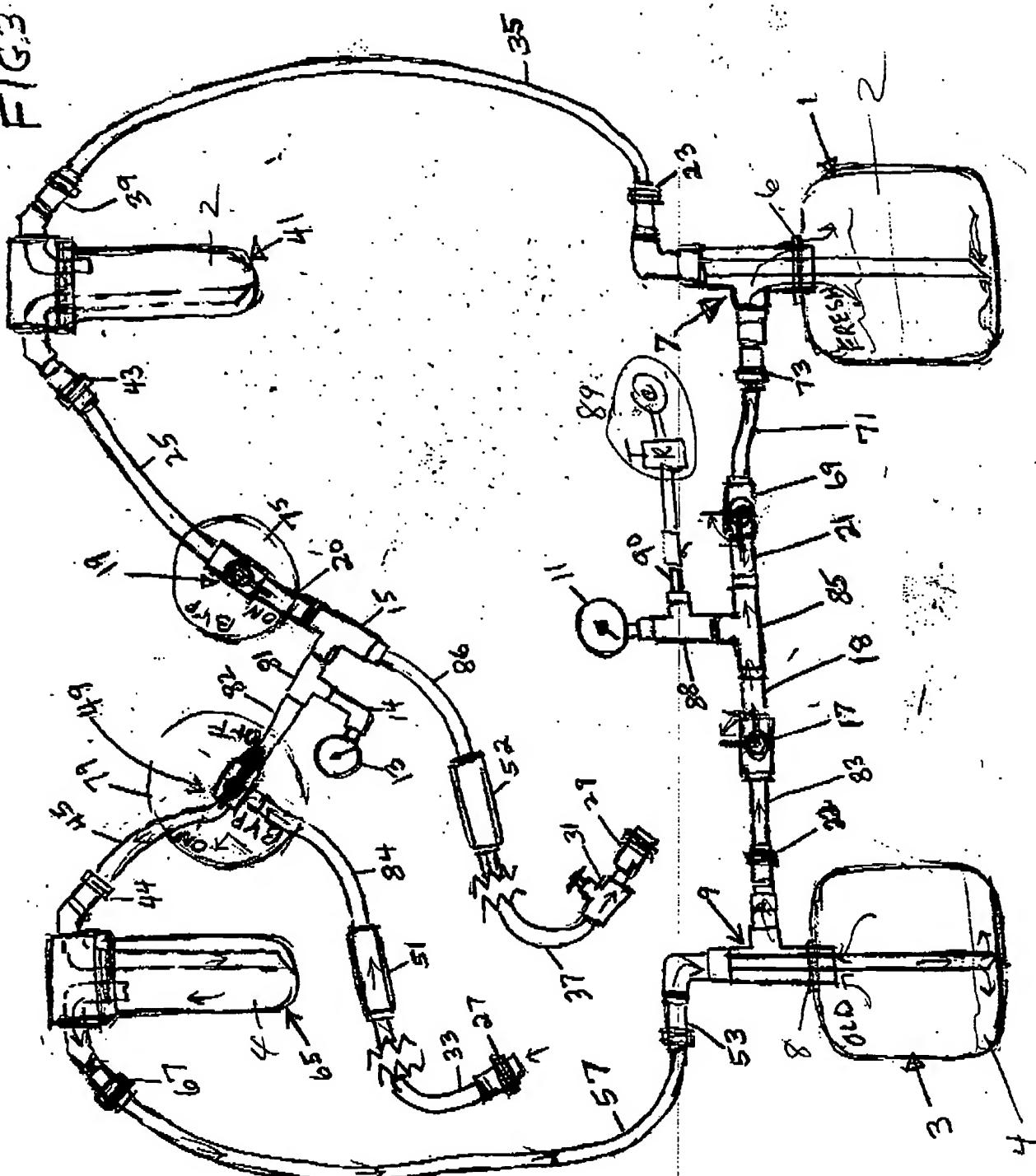


Exhibit 3

FIG. 4

